

TITLE: SKELETON FRAME ASSEMBLY FOR A TENT**BACKGROUND OF THE INVENTION****1. Field of the Invention**

The present invention relates to a tent, more
5 particularly to a skeleton frame assembly for a tent.

2. Description of the Related Art

A conventional tent assembly includes a skeleton
frame which comprises a plurality of spaced apart
vertical poles cooperatively defining a shelter space
10 thereamong, a plurality of tie beams, each of which
is disposed between an adjacent pair of the vertical
poles and each of which has two opposite ends
respectively secured to top ends of the adjacent pair
of the vertical poles, and a roof frame disposed above
15 the tie beams and the top ends of the vertical poles.
A flysheet can be spread over the top frame for
shielding purposes.

The conventional tent assembly is disadvantageous
in that the skeleton frame cannot withstand strong
20 winds and that the vertical poles and the tie beams
have a monotonous appearance.

SUMMARY OF THE INVENTION

Therefore, the object of this invention is to
provide a skeleton frame assembly for a tent, which
25 is capable of overcoming the aforesaid drawbacks of
the prior art.

According to the present invention, a skeleton

frame assembly for a tent includes: at least three spaced apart vertical poles cooperatively defining a shelter space thereamong, each of the vertical poles defining a first side and a second side transverse to the first side, and having opposite upper and lower ends, each of the vertical poles including a first vertical rod, a second vertical rod spaced apart from and aligned with the first vertical rod along the first side of a respective one of the vertical poles, a third vertical rod spaced apart from and aligned with the second vertical rod along the second side of the respective one of the vertical poles, and three elongated latticed plates, each of which interconnects an adjacent pair of the first, second and third vertical rods, each of the first, second and third vertical rods having a non-circular cross-section and being formed with two engaging grooves extending along a longitudinal length thereof, each of the latticed plates having opposite sides respectively engaging an adjacent pair of the engaging grooves in the adjacent pair of the first, second and third vertical rods; at least three pole couplers mounted respectively on the upper ends of the vertical poles; at least three horizontal tie beam units, each of which has two opposite ends connected respectively to an adjacent pair of the pole couplers so as to provide stability and rigidity to the skeleton frame

assembly; and a roof frame disposed over the pole couplers and the tie beam units above the shelter space.

BRIEF DESCRIPTION OF THE DRAWINGS

5 Other features and advantages of this invention will become more apparent in the following detailed description of the preferred embodiment of this invention, with reference to the accompanying drawings, in which:

10 Figure 1 is a perspective view of the preferred embodiment of a skeleton frame assembly for a tent according to the present invention;

 Figure 2 is a perspective view of a vertical pole and a pole coupler of the preferred embodiment;

15 Figure 3 is a partly sectional view of the vertical pole taken along lines III-III in Figure 2;

 Figure 4 is a fragmentary exploded perspective view of the preferred embodiment, illustrating the structural relationship among the vertical poles, tie-beam units, and a roof frame; and

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 Figure 5 is a fragmentary perspective view of a tie beam unit of the preferred embodiment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

25 Referring to Figures 1 to 4, the preferred embodiment of a skeleton frame assembly for a tent according to the present invention is shown to include four spaced apart vertical poles 1, four pole couplers

14, four horizontal tie beam units 2, and a roof frame
3.

As illustrated, the four vertical poles 1 are adapted to be seated on a supporting surface, and cooperatively define a shelter space thereamong. Each of the vertical poles 1 defines a first side, a second side transverse to the first side, a third side opposite to the first side and transverse to the second side, and a fourth side opposite to the second side and transverse to the third side. Each of the vertical poles 1 has opposite upper and lower ends, and includes a first vertical rod 12, a second vertical rod 12 spaced apart from and aligned with the first vertical rod 12 along the first side of a respective one of the vertical poles 1, a third vertical rod 12 spaced apart from and aligned with the second vertical rod 12 along the second side of the respective one of the vertical poles 1, and a fourth vertical rod 12 spaced apart from and aligned with the third vertical rod 12 along the third side of the respective one of the vertical poles 1. Each of the vertical poles 1 further includes four elongated latticed plates 13, each of which interconnects an adjacent pair of the first, second, third and fourth vertical rods 12. In this preferred embodiment, each of the first, second, third and fourth vertical rods 12 is made from aluminum alloy, has an octagonal cross-section, and is formed with two

engaging grooves 121 extending along a longitudinal length thereof. Each of the latticed plates 13 has opposite sides respectively engaging an adjacent pair of the engaging grooves 121 in the adjacent pair of the vertical rods 12.

The pole couplers 14 are mounted securely and respectively on the upper ends of the vertical poles 1.

Each of the tie beam units 2 has two opposite ends 212 connected respectively to an adjacent pair of the pole couplers 14 so as to provide stability and rigidity to the skeleton frame assembly.

The roof frame 3 is disposed over the pole couplers 14 and the tie beam units 2 above the shelter space. A flysheet (not shown) can be spread over the roof frame 3 for shielding purposes.

Each of the first, second, third and fourth vertical rods 12 has opposite upper and lower ends. The upper ends of the first, second, third and fourth vertical rods 12 cooperatively define the upper end of a respective one of the vertical poles 1. The lower ends of the first, second, third and fourth vertical rods 12 cooperatively define the lower end of the respective one of the vertical poles 1. The preferred embodiment further includes four footings 11, which are adapted to be seated on the supporting surface, and each of which is formed with a rectangular slot

111 (see Fig. 2) that receives fittingly the lower ends of the vertical rods 12 of a respective one of the vertical poles 1.

Each of the pole couplers 14 has a top wall 141 disposed above the upper end of a respective one of the vertical poles 1, and a peripheral wall 140 extending downwardly from the top wall 141 to enclose the upper ends of the vertical rods 12 of a respective one of the vertical poles 1. The peripheral wall 140 of each of the pole couplers 14 includes a first side wall 142A that faces the first side of a respective one of the vertical poles 1 and that is formed with a first tubular member 143 projecting outwardly therefrom, a second side wall 142B that faces the second side of the respective one of the vertical poles 1 and that is formed with a second tubular member 143 projecting outwardly therefrom, a third side wall 142C that faces the third side of the respective one of the vertical poles 1, and a fourth side wall 142D that faces the fourth side of the respective one of the vertical poles 1. The opposite ends of each of the tie beam units 2 extend into and are secured to an adjacent pair of the first and second tubular members 143 of the adjacent pair of the pole couplers 14 through a plurality of fastener screws 23 (see Figures 2 and 4).

The first and second side walls 142A, 142B of each of the pole couplers 14 cooperatively define a corner

149 (see Figure 4) therebetween. Each of the pole couplers 14 is further formed with a third tubular member 33 projecting outwardly from the corner 149 into the shelter space.

5 Referring to Figure 5, each of the tie beam units 2 preferably includes left and right parts 21, and an interconnecting unit 22 interconnecting the left and right parts 21. Each of the left and right parts 21 includes upper and lower tie beams 210, each of which
10 has opposite inner and outer ends 211,212" and an engaging groove 215 extending between the inner and outer ends 211,212" thereof, and a webbed plate 210" extending between the upper and lower tie beams 210 and inserted into the engaging grooves 215 in the upper
15 and lower tie beams 210. When the left and right parts 21 are interconnected by the interconnecting unit 22, the inner ends 211 of the upper and lower tie beams 210 of the left part 21 respectively abut against the inner ends 211 of the upper and lower tie beams 210
20 of the right part 21, while the outer ends 212" of the upper and lower tie beams 210 of each of the left and right parts 21 cooperatively define a respective one of the opposite ends 212 of a respective one of the tie beam units 2 and engage a respective one of an
25 adjacent pair of the first and second tubular members 143 of the adjacent pair of the pole couplers 14. Alternatively, hinges (not shown) may be used to

interconnect, pivotally the inner ends 211 of the upper and lower tie beams 210 of the left and right parts 21 so as to facilitate storage. The interconnecting unit 22 includes an upper
5 interconnecting plate 221 that is disposed to overlap the inner ends 211 of an adjacent pair of the upper tie beams 210 of the left and right parts 21, a lower interconnecting plate 222 that is disposed to overlap the inner ends 211 of an adjacent pair of the lower
10 tie beams 210 of the left and right parts 21, and a plurality of adjustable bolts 223 which extend through the upper and lower interconnecting plates 221, 222 and which engage the inner ends 211 of the upper and lower tie beams 210 of the left and right parts 21. The upper
15 interconnecting plate 221 of the interconnecting unit 22 of each of the tie beam units 2 is formed with a fourth tubular member 34 projecting outwardly therefrom into the shelter space.

The roof frame 3 includes an apex portion 31 and
20 a plurality of rafters 35. The apex portion 31 is formed with a plurality of rafter-holding tubular member 32s extending outwardly therefrom. Each of the rafters 35 has two opposite ends which are inserted respectively into a respective one of the rafter-
25 holding tubular members 32, and one of the third tubular member 33 of a respective one of the pole couplers 14 and the fourth tubular member 34 of the

upper interconnecting plate 221 of the interconnecting unit 22 of a respective one of the tie beam units 2, and which are secured therein through fastener screws 36.

5 With the configuration of the vertical poles 1 and the tie beam units 2 in the skeleton frame assembly of this invention, the aforesaid disadvantages of the prior art can thus be eliminated.

10 With this invention thus explained, it is apparent that numerous modifications and variations can be made without departing from the scope and spirit of this invention. It is therefore intended that the invention be limited only as indicated in the appended claims.